# Alex Preston

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## Education

**Southern Methodist University** **May 2022**

*Bachelor of Science Computer Science*

- Cumulative GPA: 3.3/4.0
- Coursework: Algorithms, Data Structures, Software Engineering, Databases, Discrete Math, Assembly
- *Second Century Scholars Program* (merit-based scholarship)

## Experience

**SMU ATLAS Experiment** **Dallas, TX**

*Undergraduate Researcher* *Aug. 2020 - Present*

- Implementing a Convolutional neural network, using TensorFlow and Scikit-learn, on a Field-programmable gate array to perform jet flavor tagging of subatomic particles.
- Optimizing neural network using QKeras to reduce latency and increase throughput
- Developing Jupyter Notebooks to visualize how neural network processes particle collision images

**SMU Lyle School of Engineering** **Dallas, TX**

*CS 1342 Teaching Assistant* *Aug. 2020 - Present*

- Teaching and Assessing various introductory labs and programming assignments for over 100+ undergraduate students. (Principles of Computer Science, Programming Concepts)
- Mentoring students with C++ and Java Programming, including memory management and File I/O

**Securboration** **Melbourne, FL**

*Software Engineering Intern* *May 2020 - Jun. 2019*

- Created novel Python micro-service to automatically find the nearest weather station (including redundancy checking when data was not available)
- Fetched weather data from government API based on plane crash date and location to populate an Excel report that aided in visualization of accident data
- Performed data cleanup in Python to increase the quality of weather station data by removing fuzzy duplicates, deleting unnecessary columns, and manipulating data when needed

## Personal Projects (Portfolio: alexpreston.org/portfolio/)

**Book Summarizer** **Dallas, TX**

*Independent Project* *May 2020 - Present*

- Designing and creating a website in Python capable of summarizing articles, scientific journals, and books
- Creating database in PostgreSQL to transfer multiple summary lengths to user
- Implementing 7 different extractive summarization algorithms in Python for users to choose from
- Automating memory management of database in Celery to increase the efficiency of accessing user data.

**GP Quantitative** **Dallas, TX**

*Group Project* *Jun. 2020 - Present*

- Worked in a team of 3 to create a financial analysis website for retail investors to learn about markets
- Designed data visualizations in Pandas, Chart.js, and Matplotlib to help the user discover market trends
- Created scrapers in Python and Node.js to pull alternative market data not available through APIs

**News Aggregator** **Melbourne, FL**

*Independent Project* *Dec. 2019 - Jan. 2020*

- Created a content aggregator in Python and Django to scrape headlines of news sites for curated news site
- Automated back-end tasks to have scrapers continuously pull new headlines in real-time
- Designed a responsive mobile version in CSS and Javascript to change layout based on device type

## Technical Skills & Interests

- **Languages/Technologies:** Back-end development in Python, C++, and Java. Python/SQL Data Analysis & Visualization. Database management in MySQL and PostgreSQL. Experience with TensorFlow and Keras.
- **Interests:** Philosophy (epistemology and logic), space, running, cooking, writing